LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application.

1.-33. (Cancelled)

34. (Withdrawn) An apparatus for depositing a layer on a substrate, comprising:

at least one plasma cascade source to generate at least one plasma;

a first deposition material source configured to bring a first deposition material into each plasma;-

a substrate positioner to bring and/or keep at least a part of a substrate in such a position in a processing chamber that the substrate makes contact with said plasma; and

a second plasma cascade source, a plasma source, a vapor deposition source and/or a sputtering source configured to deposit at least a second deposition material on the substrate.

35. (Withdrawn) An apparatus according to claim 34, wherein the first deposition material source comprises at least one sputtering electrode which contains deposition material to be deposited, wherein the sputtering electrode is positioned such that the plasma generated by the at least one plasma source during use sputters material from the sputtering electrode on the substrate.

36. (Withdrawn) An apparatus according to claim 35, wherein each sputtering electrode is arranged downstream of the at least one plasma source, and at least one sputtering electrode is provided with at least one plasma passage to allow the plasma to pass from the source to the substrate.

37. (Withdrawn) An apparatus according to claim 35, wherein the sputtering electrode lies against the source.

38. (Withdrawn) An apparatus according to claim 37, wherein the first deposition material source comprises at least one fluid supply channel to supply a material to be deposited, being in a volatile state, to the plasma.

39. (Withdrawn) An apparatus according to claim 38, wherein the at least one sputtering electrode is provided with said fluid supply channel.

40. (Withdrawn) An apparatus according to claim 34, wherein the apparatus is provided with at least two plasma cascade sources to generate at least two plasmas, wherein these plasma cascade sources and the substrate positioner are positioned such that opposite sides of the substrate during use make contact with the plasmas generated by the two plasma cascade sources to deposit material an the opposite sides of the substrate.

41. (Withdrawn) An apparatus according to claim 34, wherein the apparatus is provided with a substrate supply roller and a discharge roller, respectively, to supply and discharge, respectively, a substrate that can be rolled up, such as a web and/or sheet-like substrate, to and from the processing chamber, respectively.

42. (Withdrawn) An apparatus according to claim 34, wherein a wall of the processing chamber is provided with at least one passage to pass the substrate into and/or out of that chamber.

43. (Withdrawn) An apparatus according to claim 42, wherein at least a part of the at least one passage of the processing chamber wall is bounded by oppositely arranged feed-through rollers, and the feed-through rollers are arranged to engage a part of the substrate disposed between them during use, for the purpose of feed-through of the substrate.

44. (Withdrawn) An apparatus according to claim 41, wherein the apparatus is provided with a pair of rollers to deform the substrate which has unrolled from the supply roller.

45. (Withdrawn) An apparatus according to claim 44, wherein the pair of rollers are arranged to corrugate and/or serrate the substrate.

46. (Withdrawn) An apparatus according to claim 34, wherein the apparatus is provided with a vapor deposition apparatus to vapor deposit material on the substrate.

47. (Withdrawn) An apparatus according to claim 34, wherein the apparatus is provided with at least one separate sputtering source configured to sputter material on the substrate.

48. (Withdrawn) A catalyst provided with at least one carrier material [[(B)]] and at least one catalyst material [[(A)]], the carrier material comprising are oxidic material, and the carrier material further comprising at least one heat conducting material.

49. (Withdrawn) A catalyst according to claim 48, wherein the heat-conducting material comprises carbon.

50. (Withdrawn) A catalyst manufactured according to the method of claim 1.

51. (New) A method for manufacturing a mixed layer including:
providing a processing chamber with at least one plasma cascade source;
introducing a substrate into the processing chamber;
generating at least one plasma with the at least one plasma cascade source;
introducing a first deposition material in the plasma;

depositing the first deposition material on the substrate under the influence of the plasma;

providing at least one sputtering electrode that comprises a second deposition material and that is arranged in the processing chamber; and

contacting the plasma with the at least one sputtering electrode to sputter the substrate with the second deposition material of the at least one electrode for depositing the second deposition material simultaneously with the first deposition material on the substrate.

52. (New) The method according to claim 51, further comprising:

providing at least one passage in the sputtering electrode;

passing the plasma at least partly through the at least one passage of the at least one sputtering electrode to contact the plasma with the electrode.

53. (New) The method according to claim 51, further comprising:

supplying the first deposition material outside the at least one plasma source into the processing chamber to the plasma in the processing chamber.

54. (New) The method according to claim 51, further comprising:

supplying at least one volatile compound of the first deposition material to the plasma for the purpose of the deposition.

55. (New) The method according to claim 54, wherein the volatile compound contains at least one precursor material which decomposes in the processing chamber in material to be deposited, before the material has reached the substrate.

56. (New) The method according to claim 51, further comprising:

providing at least one second source chosen from the group consisting of a second plasma cascade source, a plasma source, a vapor deposition source and a sputtering source; and

depositing a third deposition material on the substrate with the second source.

57. (New) The method according to claim 51, wherein said first or second deposition material comprises at least one catalyst material which, whether or not after an activation treatment such as a reducing step, is catalytically active.

58. (New) The method according to claim 51, wherein said first or second deposition material comprises at least one carrier material, which material is inherently, or after a further treatment, suitable to carry catalyst material.

59. (New) The method according to claim 57, wherein the at least one catalyst material and the at least one carrier material are deposited on the substrate by different sources.

60. (New) The method according to claim 57, wherein the at least one sputtering electrode contains at least a part of both said catalyst material and said carrier material.

61. (New) The method according to claim 60, wherein the sputtering electrode contains compressed powders of said materials to be deposited on the substrate.

62. (New) The method according to claim 60, wherein the at least one sputtering electrode contains an alloy of said catalyst material and said carrier material.

63. (New) The method according to claim 51, wherein the substrate comprises sheet material.

64. (New) The method according to claim 51, wherein the substrate is moved in the processing chamber at least in such a way that each time a different part of the substrate makes contact with the plasma.

65. (New) The method according to claim 51, wherein the substrate is brought from an environment into the processing chamber and is discharged from the processing chamber to the environment while the first deposition material is deposited on the substrate in the processing chamber.

66. (New) The method according to claim 51, wherein the substrate is substantially non-porous.

67. (New) The method according to claim 51, wherein the substrate comprises at least one carrier material.

68. (New) The method according claim 51, wherein the substrate comprises at least one metal and/or alloy.

69. (New) The method according to claim 51, wherein the substrate comprises Fecralloy.

70. (New) The method according to claim 51, wherein the substrate comprises corrugated material.

71. (New) The method according to claim 51, wherein the substrate is substantially porous.

72. (New) The method according to claim 58, wherein said carrier material comprises a metal.

73. (New) The method according to claim 58, wherein said carrier material comprises an oxidized metal.

74. (New) The method according to claim 58, wherein said carrier material comprises a semiconductor.

75. (New) The method according to claim 58, wherein said carrier material comprises an oxidized semiconductor.

76. (New) The method according to claim 53, wherein the carrier material further contains a heat-conducting material.

77. (New) The method according to claim 57, wherein the at least one catalyst material comprises or more of: nickel, copper, palladium, rhodium, platinum or iron.

78. (New) The method according to claim 57, wherein the first or second deposition material is deposited such that the chemical composition of the deposited material measured over a distance of 20 cm differs by less than 10%.

79. (New) The method according to claim 51, wherein reducing is carried out at an elevated temperature for the purpose of reduction of the deposited material on the substrate.

80. (New) The method according to claim 79, wherein the reducing step is carried out under the influence of hydrogen.

81. (New) The method according to claim 80, wherein inert gas and hydrogen, is supplied to the substrate for the purpose of the reduction.

82. (New) The method according to claim 51, wherein the substrate is adjusted to a particular electrical potential, for instance by DC, pulsed DC and/or RF biasing.

83. (New) The method according to claim 51, wherein the substrate is adjusted to a particular treatment temperature.